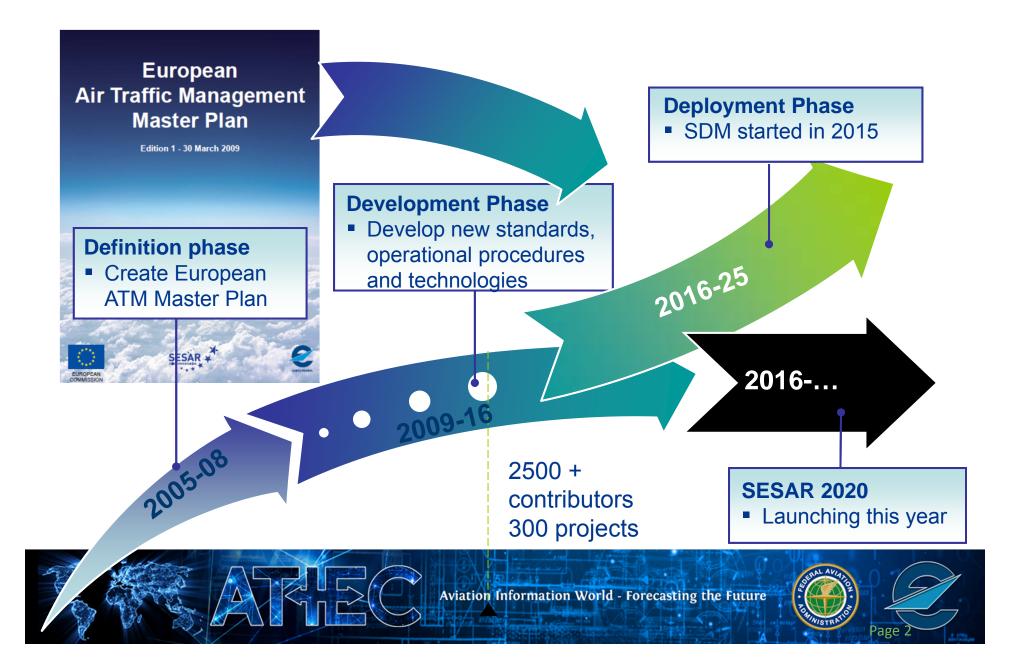# SESAR SWIM Global Demonstrations

Presented to: ATIEC 2016

By: Eduard Porosnicu (EUROCONTROL)

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Aviation Information World – Forecasting the Future

SESAR

European Air Traffic Management Master Plan

Edition 1 - 30 March 2009

EUROPEAN COMMISSION SESAR

Definition phase
- Create European ATM Master Plan

Development Phase
- Develop new standards, operational procedures and technologies

Deployment Phase
- SDM started in 2015

2016-25

2005-08

2009-16

2016-...

2500 + contributors
300 projects

SESAR 2020
- Launching this year

ATEC

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Why a SWIM Global Demo?

Background

- Intra European SWIM interoperability: WAC 2013
- Opening up to global community: SWIM Master Classes 20XX
- Towards <u>GLOBAL</u> interoperability: MG-II, APAC, SGD

Objectives

- Demonstrate global interoperability
- Demonstrate business, operational and technical benefits
- Capture lessons learned & Feed back into ICAO

SESAR
JOINT UNDERTAKING

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Event format

Joint Interoperability Demonstrations

- **Demo #1: FAA's NextGen – SESAR**
- **Demo #2: Globally-available SWIM data sources**
- **Demo #3: Australia – United Arab Emirates – Europe**
- **Demo #4.1: Brazil – Europe**
- **Demo #4.2: Mongolia – Europe**

Panel sessions

- **Collaboration**
- **Benefits**
- **Next steps**

Showcases

Benefits of SWIM

Business perspective

- Agility in future evolution
- Flexibility in global uptake
- Global interoperability, common methods and standards
- Cost efficiency by service oriented architecture
- Secured information

Operational perspective

- Enables ASBUs (XMAN, A-CDM, FF-ICE, TBO, ..)
- The right information at the right time (filtering, alerting, visualization)

Technology perspective

- Re-use of code, rapid development
- Re-use of services
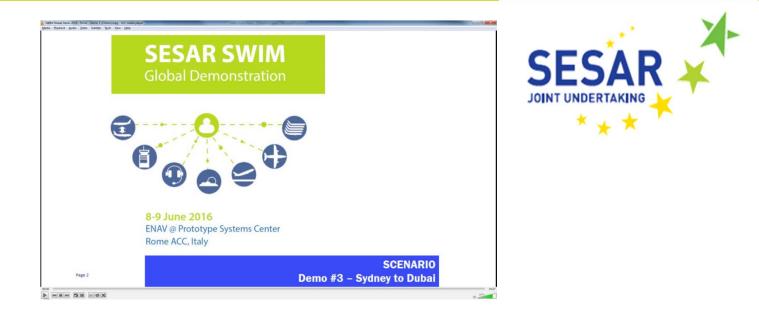- Common standards
- Collaborative environment

Demo #3 - video

- **Summary video recording available from SJU**
  https://www.youtube.com/watch?v=kmbnDGOZEJU&list=PLJltpHUetWvFgLe89aISYiWh1atW24NhR&index=16

Lessons learned (1/3)

- Benefits are recognised by global partners
- Further integration of AU operations into network management welcomed
- Automated filtering, alerting and visualisation is increasing situational awareness
- Further work is required to achieve full traceability of data originator, processing and quality (meta data)
- Usage of the registry as a collaborative environment tool was fair, but not optimal.
- Usage of FIXM, AIXM, WXXM is very effective in easily achieving global interoperability. Using the XMs "works"!
- Issues with GUFI and UUID (not as unique as it should be)

Lessons learned (2/3)

- **Some residual ambiguity on FIXM 3.0.1 elements (or missing) that will be fixed in FIXM 4.0.**

- **Extensions to the core versions of XMs have come into scope at several occasions**

- **Architecture:**
  - *Common references were used: GATMOC, ICAO SWIM manual*
  - *Easier to start with NAF operational and technical views*

- **Demonstrated the possibility to integrate different deployment models (Centralized, distributed or federated)**

- **The role and ownership of (technical) transformation services. Popped up at many places in the preparation, and can have multiple deployment options.**

Lessons learned (3/3)

- Usage of open standards was welcomed by all
- SOAP based WS and REST-full based WS were selected as technology to support synchronous messaging (R/R), and successfully validated (overlap with EU SWIM TI yellow profile)
- AMQP 1.0 was selected as technology to support asynchronous messaging (P/S), and successfully validated. Recommendation to further explore usage for R/R as well.
- Lots of connectivity problems, caused by all kinds of variations of network configurations. Requires further coordination to reach global standards.
- Need to distinguish between network security, transport level security, message level security, access management and business rules.
- Open issues on end-to-end security and data access governance and enforcement.